# Troubleshooting the Network by ONRC@Stanford

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## Response Summary

Total Started Survey: **64**
Total Completed Survey: **64  (100%)**

PAGE: 1

1. Please rate these symptoms that have appeared in your network in the last year. 5=most often, 1=least often          Download

| | 5 | 4 | 3 | 2 | 1 | Response Count |
|---|---|---|---|---|---|---|
| **reachability problem** | **47.5% (29)** | 11.5% (7) | 18.0% (11) | 13.1% (8) | 9.8% (6) | 61 |
| **spanning tree issues** | 5.1% (3) | 1.7% (1) | 18.6% (11) | 27.1% (16) | **47.5% (28)** | 59 |
| **security policy violation** | 5.0% (3) | 11.7% (7) | 23.3% (14) | 26.7% (16) | **33.3% (20)** | 60 |
| **router CPU high utilization** | 7.9% (5) | 22.2% (14) | **33.3% (21)** | 20.6% (13) | 15.9% (10) | 63 |
| **congestion** | 13.3% (8) | 15.0% (9) | 21.7% (13) | 23.3% (14) | **26.7% (16)** | 60 |
| **forwarding loop** | 6.8% (4) | 5.1% (3) | 5.1% (3) | 39.0% (23) | **44.1% (26)** | 59 |
| **performance (throughput/latency)** | **29.0% (18)** | 25.8% (16) | 21.0% (13) | 9.7% (6) | 14.5% (9) | 62 |
| **intermittent problem** | 23.0% (14) | **27.9% (17)** | 19.7% (12) | 18.0% (11) | 11.5% (7) | 61 |
| **broadcast/multicast storm** | 7.3% (4) | 3.6% (2) | 9.1% (5) | 27.3% (15) | **52.7% (29)** | 55 |
| Other (please specify) Show Responses | | | | | | 8 |
| **answered question** | | | | | | **63** |
| **skipped question** | | | | | | **1** |

2. Please rank these causes you have found for the problems you identified. 5=most often, 1=least often          Download

| | 5 | 4 | 3 | 2 | 1 | Response Count |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| protocol misconfiguration | 6.9% (4) | 19.0% (11) | 13.8% (8) | 22.4% (13) | **37.9% (22)** | 58 |
| ACL misconfiguration | 13.8% (8) | 8.6% (5) | 20.7% (12) | **29.3% (17)** | 27.6% (16) | 58 |
| QoS/TE misconfiguration | 1.8% (1) | 5.3% (3) | 14.0% (8) | 22.8% (13) | **56.1% (32)** | 57 |
| hardware failure | 18.6% (11) | 22.0% (13) | **27.1% (16)** | 11.9% (7) | 20.3% (12) | 59 |
| switch/router software bug | 21.7% (13) | 18.3% (11) | **26.7% (16)** | 16.7% (10) | 16.7% (10) | 60 |
| host network stack bug | 1.9% (1) | 15.1% (8) | 13.2% (7) | 20.8% (11) | **49.1% (26)** | 53 |
| attack | 16.7% (10) | 11.7% (7) | 16.7% (10) | 25.0% (15) | **30.0% (18)** | 60 |
| software upgrade | 7.0% (4) | 12.3% (7) | 21.1% (12) | **31.6% (18)** | 28.1% (16) | 57 |
| external | 24.2% (15) | 17.7% (11) | 21.0% (13) | 11.3% (7) | **25.8% (16)** | 62 |
| unknown | 5.6% (3) | 11.1% (6) | 24.1% (13) | 24.1% (13) | **35.2% (19)** | 54 |
| | | | Other (please specify) Show Responses | | | 5 |
| | | | **answered question** | | | **62** |
| | | | **skipped question** | | | **2** |

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**3. How might we able to help you with your network problems?**    Create Chart    Download

| | Response Percent | Response Count |
|---|---|---|
| **Would you like us to help you run the tool in your network** | 13.5% | 7 |
| **Would you like to share the configuration of your network under NDA so that we can run in our lab?** | 13.5% | 7 |
| **Would you like to run the tool in your network by yourself?** | **98.1%** | **51** |
| Please leave your email address if you would like to hear more from us. Show Responses | | 23 |
| **answered question** | | **52** |
| **skipped question** | | **12** |

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**4. What is your role with respect to your organization's IP network?**    Create Chart    Download

| | Response Percent | Response Count |
|---|---|---|
| **Network Administrator** | **92.6%** | **50** |

| | | |
|---|---|---|
| **IT Administrator** | 24.1% | 13 |
| **Field Engineer** | 3.7% | 2 |
| **Sales Engineer** | 7.4% | 4 |
| | Other (please specify)<br>Show Responses | 11 |
| | **answered question** | **54** |
| | **skipped question** | **10** |

### 5. How many network-related IT tickets are generated every month in your network?

Create Chart    Download

| | Response Percent | Response Count |
|---|---|---|
| **<10** | 20.6% | 13 |
| **10-50** | 33.3% | 21 |
| **50-100** | 9.5% | 6 |
| **>100** | **36.5%** | **23** |
| | Other (please specify)<br>Show Responses | 1 |
| | **answered question** | **63** |
| | **skipped question** | **1** |

### 6. What tool are you using for troubleshooting? 5=most often, 1=least often

Download

| | 5 | 4 | 3 | 2 | 1 | Response Count |
|---|---|---|---|---|---|---|
| **ping** | 69.8% (44) | 17.5% (11) | 9.5% (6) | 1.6% (1) | 1.6% (1) | 63 |
| **traceroute** | 46.0% (29) | 33.3% (21) | 15.9% (10) | 3.2% (2) | 1.6% (1) | 63 |
| **netperf/iperf** | 9.1% (5) | 7.3% (4) | 18.2% (10) | **34.5% (19)** | 30.9% (17) | 55 |
| **SNMP** | 41.9% (26) | 22.6% (14) | 17.7% (11) | 9.7% (6) | 8.1% (5) | 62 |
| **configuration version control** | 22.0% (13) | 15.3% (9) | 20.3% (12) | 20.3% (12) | **22.0% (13)** | 59 |
| **sFlow/NetFlow** | 10.9% (6) | 14.5% (8) | 21.8% (12) | 20.0% (11) | **32.7% (18)** | 55 |
| | | | | Other (please specify)<br>Show Responses | | 14 |
| | | | | **answered question** | | **63** |

| 7. What is the expected time to fix a problem by one engineer? | | Create Chart | Download |
|---|---|---|---|
| | | Response Percent | Response Count |
| <5 min | | 5.0% | 3 |
| 5-30 min | | **40.0%** | **24** |
| 30min - 1 hour | | 30.0% | 18 |
| 1 - 5 hour | | 23.3% | 14 |
| > 5 hour | | 1.7% | 1 |
| | | answered question | 60 |
| | | skipped question | 4 |

| 8. How large is your network? | | Create Chart | Download |
|---|---|---|---|
| | | Response Percent | Response Count |
| Small: <1k hosts | | 23.4% | 15 |
| Medium: 1k-10k hosts | | **37.5%** | **24** |
| Large: 10k-100k hosts | | 18.8% | 12 |
| Very Large: > 100k hosts | | 20.3% | 13 |
| | | answered question | 64 |
| | | skipped question | 0 |

| 9. What would your ideal solution tool to network debugging do for you? (Whether its difficult or impossible does not matter: just fantasize) | | Create Chart | Download |
|---|---|---|---|
| | | Response Percent | Response Count |
| Automatic test generation of test packets to check for performance and correctness problems | | 68.9% | 42 |
| A versioning tool by which you can return the network to any past configuration version and test | | 44.3% | 27 |
| Being able to follow the state of a packet and the configuration it sees (like Single Stepping in gdb) | | 65.6% | 40 |
| While debugging, being able to 'watch' the network for specific events of interest. Example: IP packet arrival on a particular switch from a particular host. | | **80.3%** | **49** |
| a way to breakdown traffic consumption on | | | |

| | | |
|---|---|---|
| **every link by host, user, application** | 59.0% | 36 |
| **A monitor that alerts an admin when a previously encountered bug was triggered** | 49.2% | 30 |
| Other (please specify)<br>Show Responses | | 8 |
| **answered question** | | **61** |
| **skipped question** | | **3** |

10. Open question: Please briefly describe your most difficult/interesting troubleshooting experience. Do you have other suggestions that we can help you troubleshoot your network?    <span style="color:teal">Download</span>

| | Response Count |
|---|---|
| **Show Responses** | 19 |
| **answered question** | **19** |
| **skipped question** | **45** |